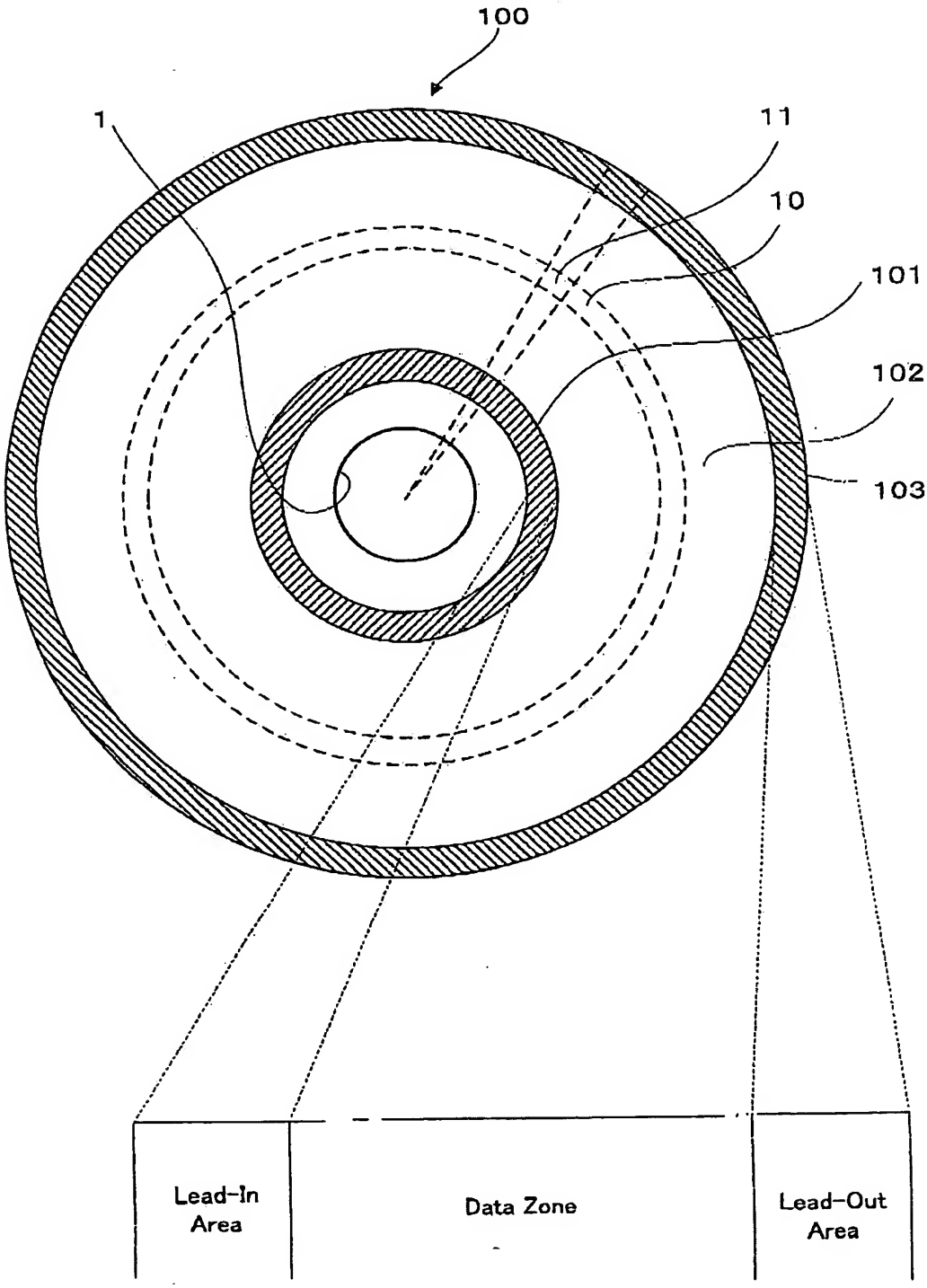
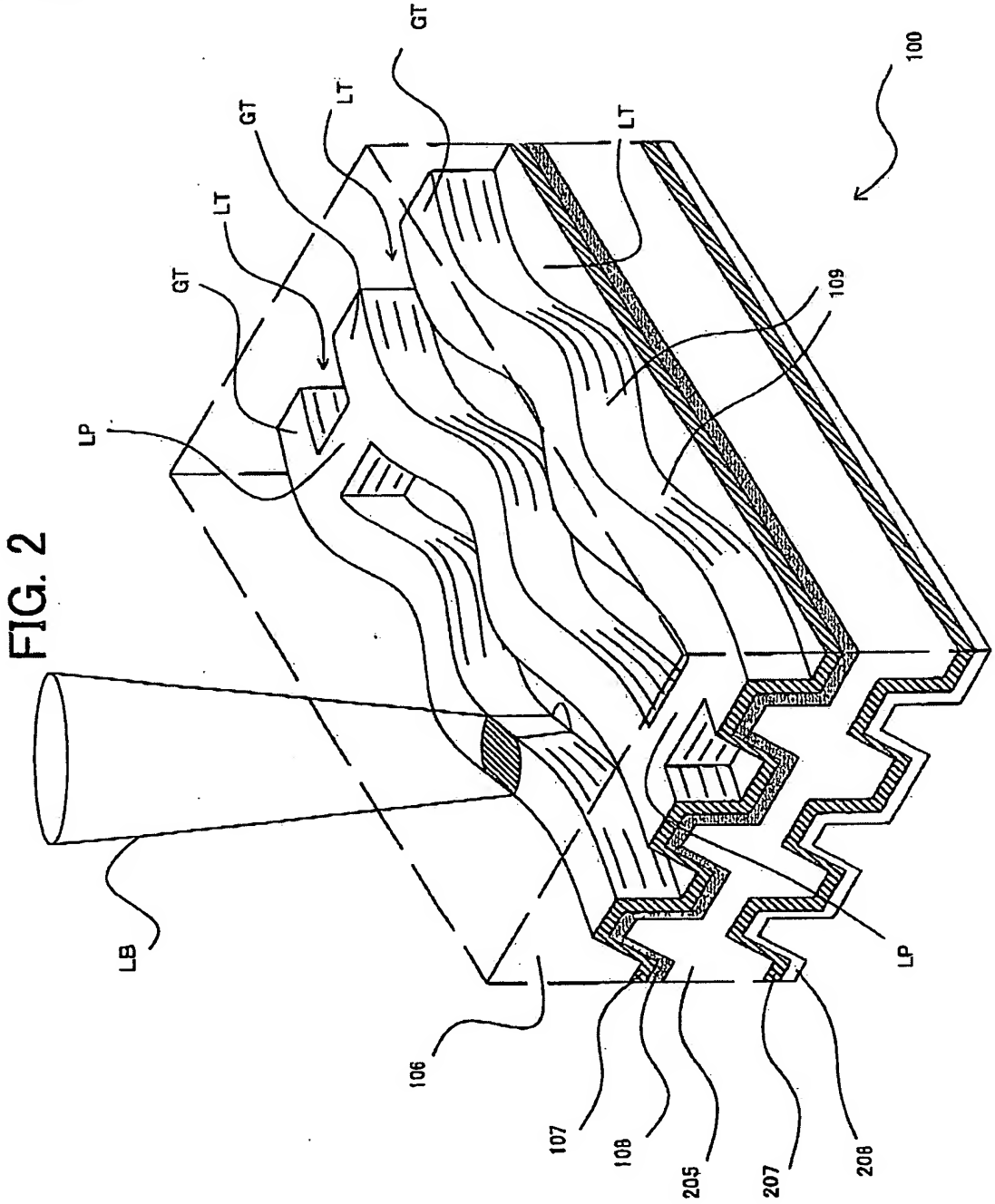
[FIG. 1]

FIG. 1



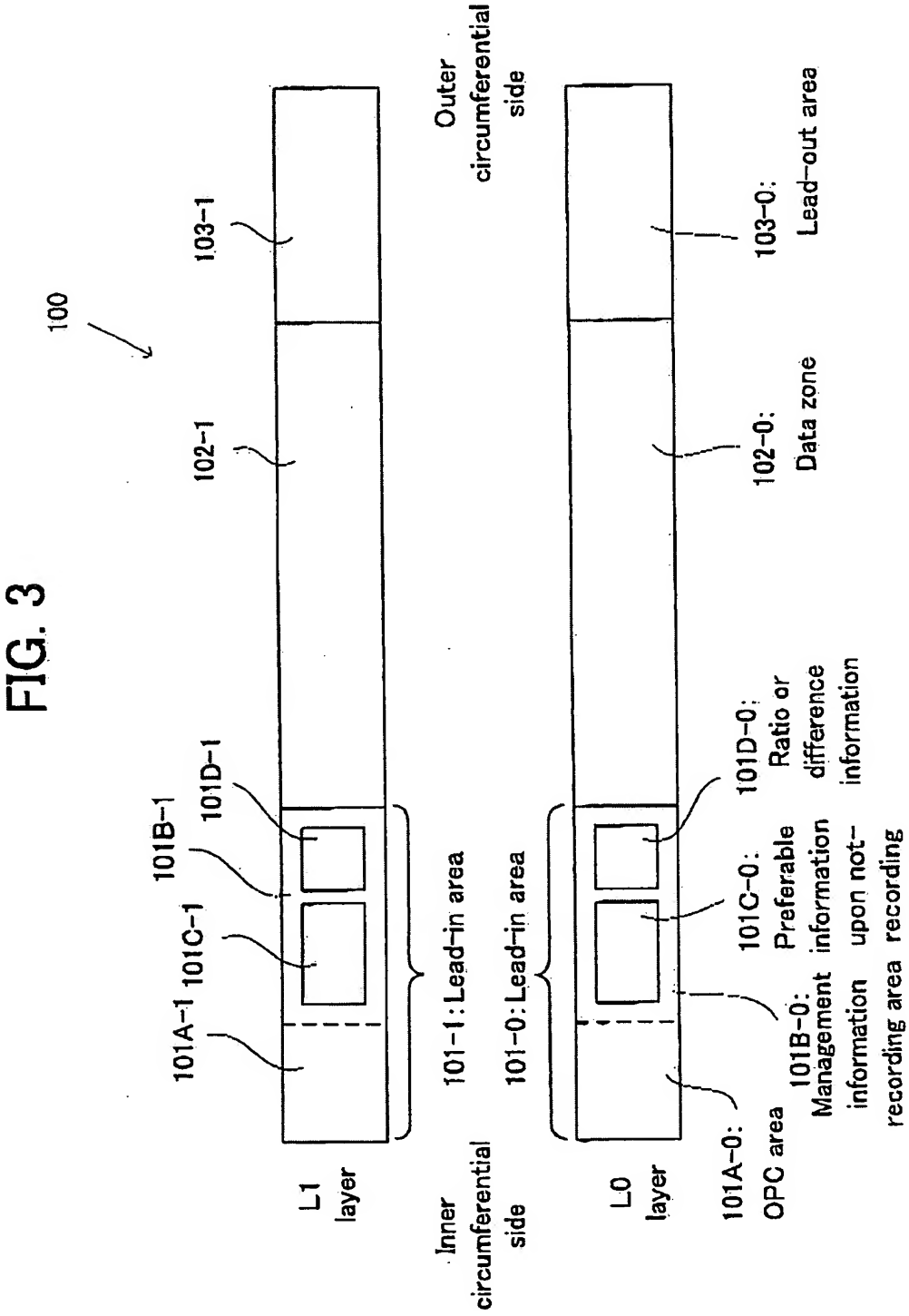
[FIG. 2]

FIG. 2



[FIG. 3]

FIG. 3


100
103-1
Outer circumferential side
102-1
101B-1
101D-1
101A-1
101C-1
101-1: Lead-in area
101-0: Lead-in area
L1 layer
Inner circumferential side
L0 layer
101A-0: OPC area
101B-0: Management information recording area
101C-0: Preferable information upon not-recording
101D-0: Ratio or difference information
102-0: Data zone
103-0: Lead-out area

[FIG. 4]

FIG. 4

(for L1 layer)

Field ID	Contents	Location
ID 0	ECC block address	all the recording areas
ID 1	Extended information, etc.	Lead-in area
ID 2	Strategy information for 1X (L0 unrecorded)	Lead-in area
ID 3	Production identification number	Lead-in area
ID 4	Production identification number	Lead-in area
ID 5	Strategy information for 1X (L0 recorded)	Lead-in area
ID 6	Strategy information for 2X (L0 unrecorded)	Lead-in area
ID 7	Strategy information for 2X (L0 recorded)	Lead-in area
ID 8	Strategy information for 4X (L0 unrecorded)	Lead-in area
ID 9	Strategy information for 4X (L0 unrecorded)	Lead-in area
ID 10	Strategy information for 4X (L0 unrecorded)	Lead-in area
ID 11	Strategy information for 4X (L0 recorded)	Lead-in area
ID 12	Strategy information for 4X (L0 recorded)	Lead-in area
ID 13	Strategy information for 4X (L0 recorded)	Lead-in area

[FIG. 5]

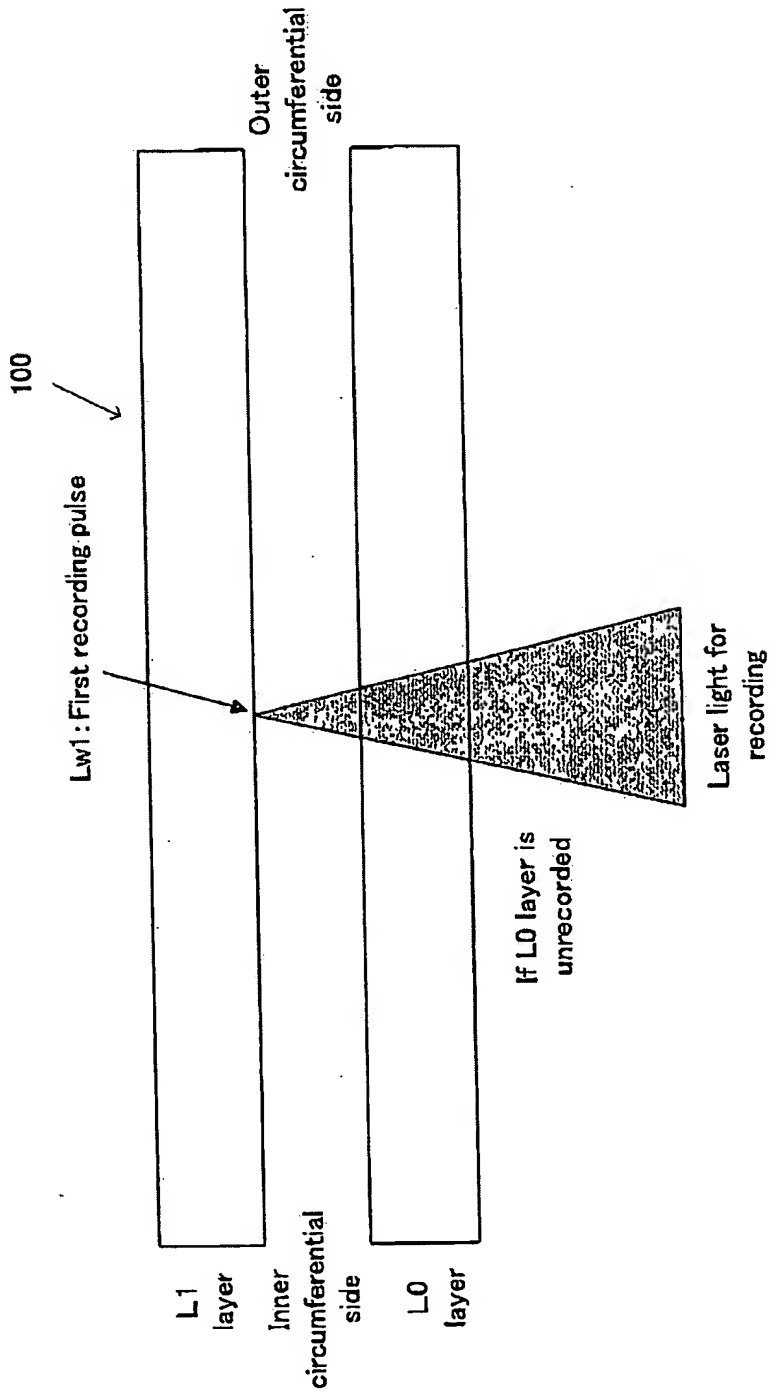
FIG. 5

(for L1 layer)

Field ID	Location	ECC block address
Field ID1	Start of the Lead-in area	FF DD05h
Field ID2		
Field ID3		
Field ID4		
Field ID5		
Field ID6		
Field ID7		
Field ID8		
Field ID9		
Field ID10		
Field ID11		
Field ID12		
Field ID13		
Field ID1		
•		
•		
Field ID12		
Field ID13		
Field ID0		FF D003h
Field ID0		FF D002h
Field ID0		FF D001h
Field ID0	End of the Lead-in area	FF D000h
Field ID0		FF CFFFh

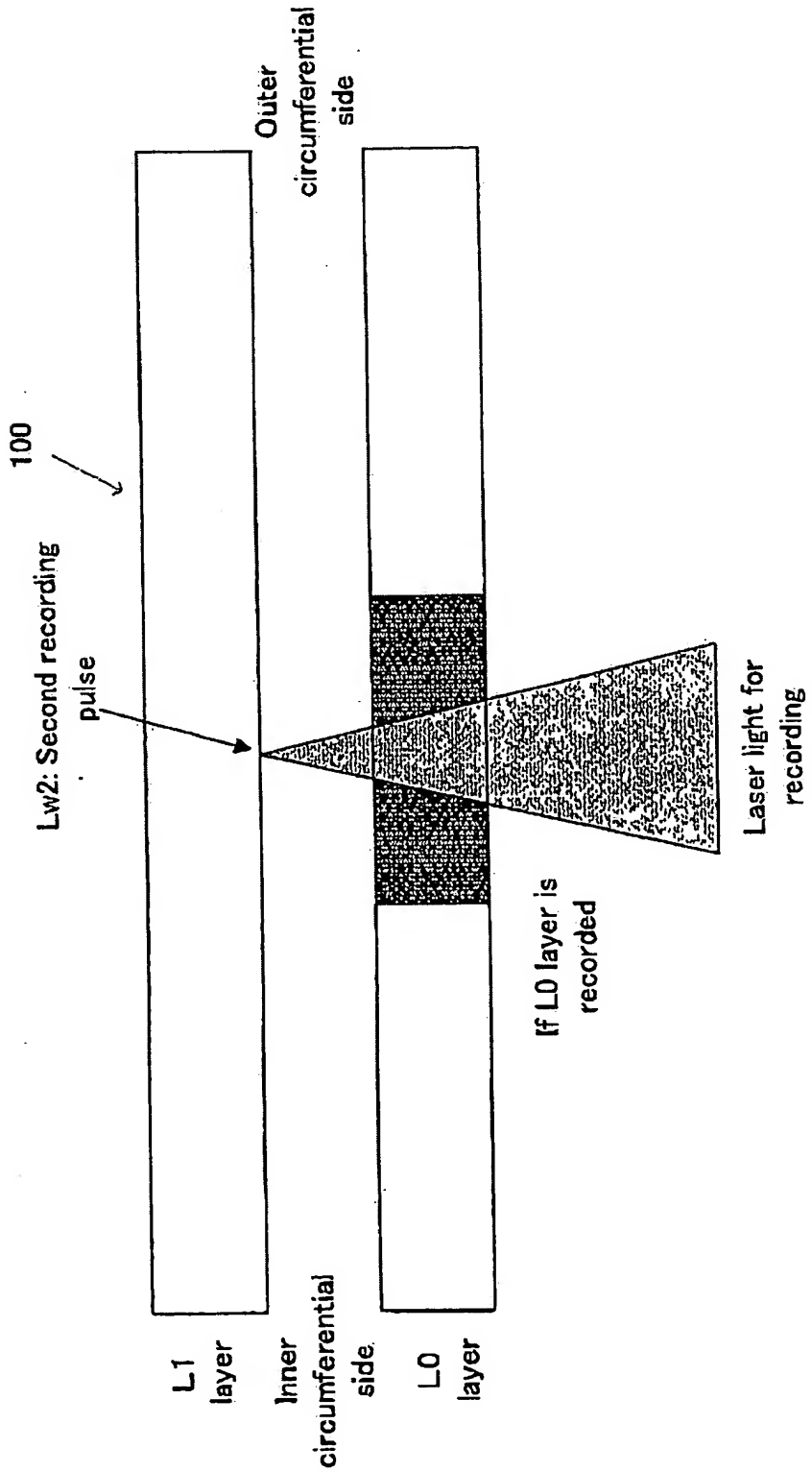
[FIG. 6]

FIG. 6


100
Outer circumferential side
Lw1: First recording pulse
Laser light for recording
If L0 layer is unrecorded
L1 layer
Inner circumferential side
L0 layer

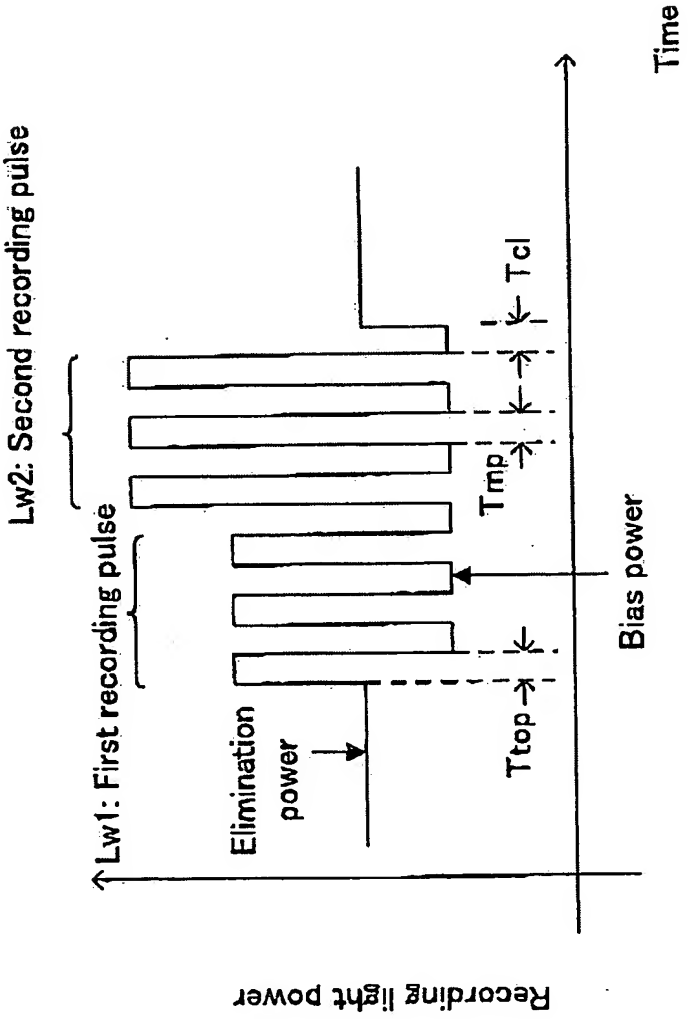
[FIG. 7]

FIG. 7


100
Lw2: Second recording pulse
Outer circumferential side
Inner circumferential side
L1 layer
L0 layer
If L0 layer is recorded
Laser light for recording

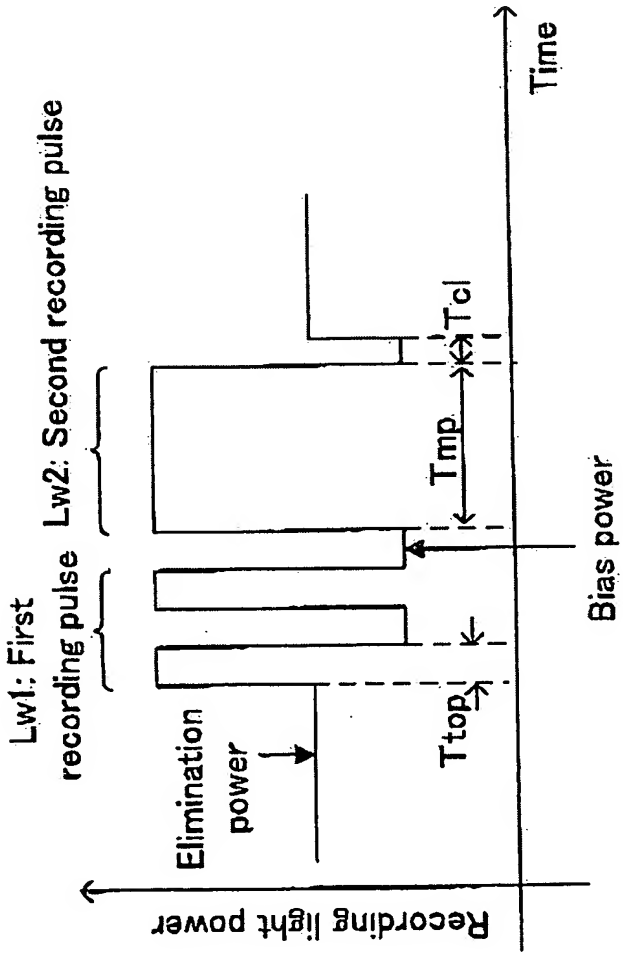
[FIG. 8]

FIG. 8


Lw2: Second recording pulse
Lw1: First recording pulse
Elimination power
Bias power
Tcl
Tmp
Ttop
Time
Recording light power

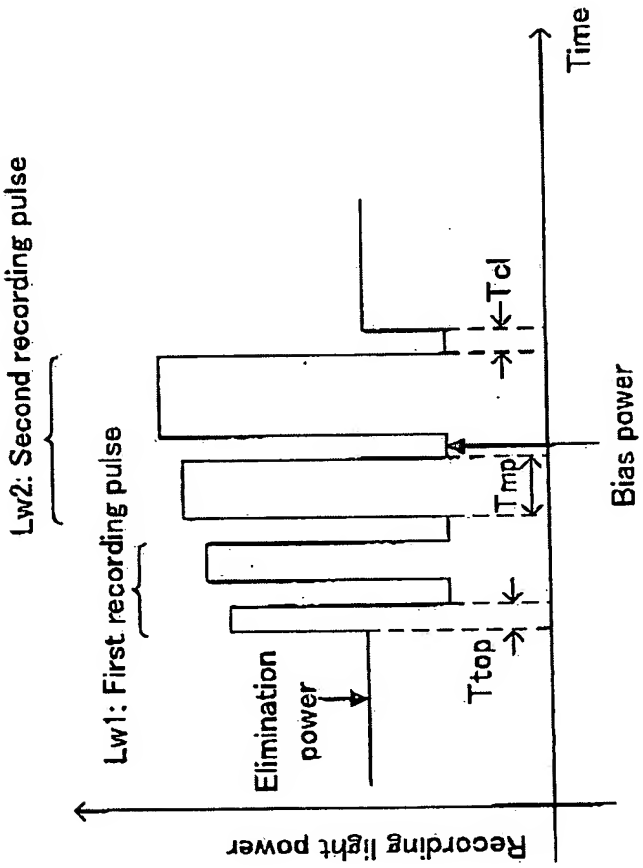
[FIG. 9]

FIG. 9


Time
Tcl
Tmp
Lw2: Second recording pulse
Bias power
Lw1: First recording pulse
Elimination power
Ttop
Recording light power

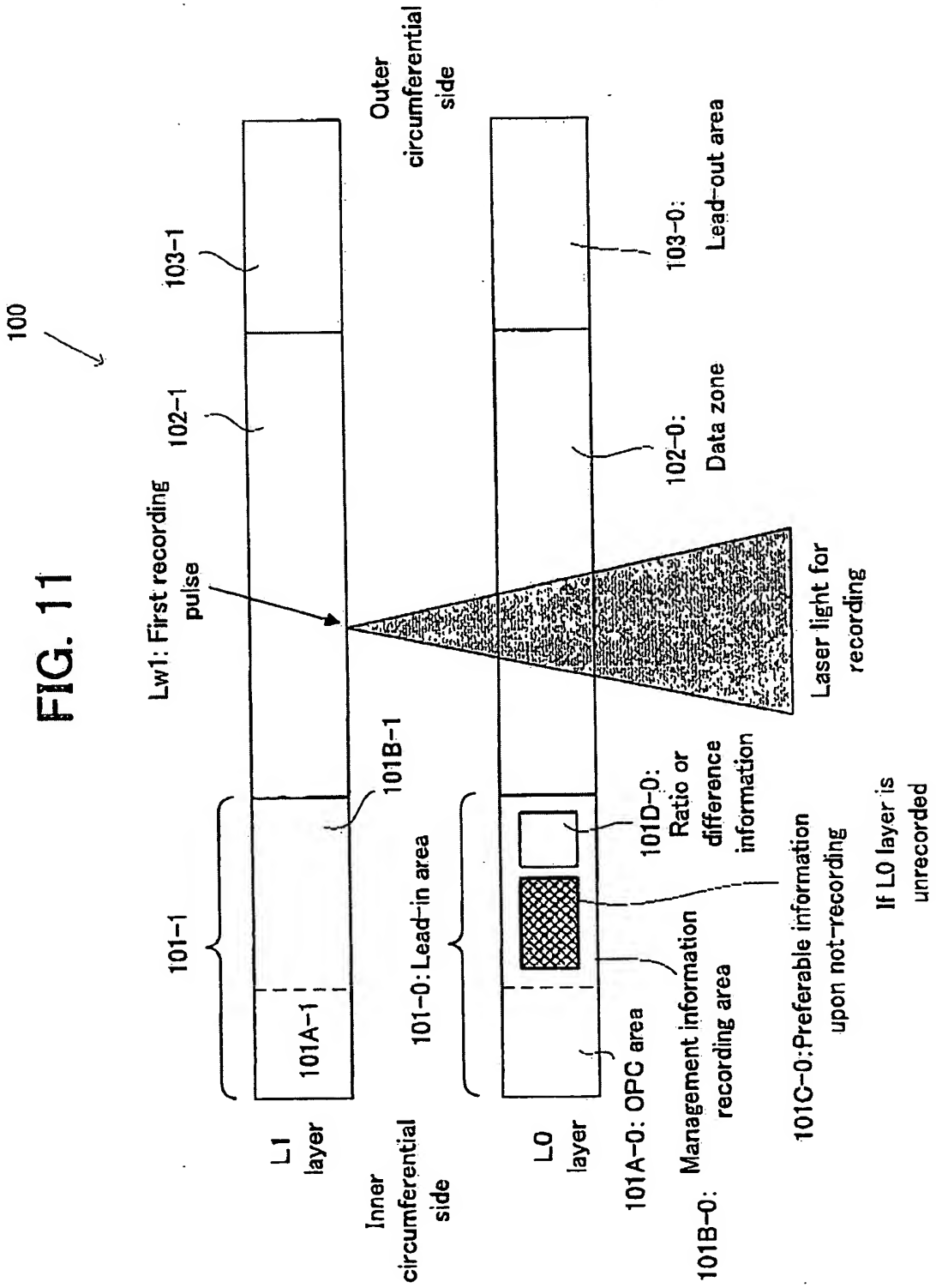
[FIG. 10]

図10


Time
Bias power
Tcl
Tmp
Ttop
Elimination power
Lw1: First recording pulse
Lw2: Second recording pulse
Recording light power

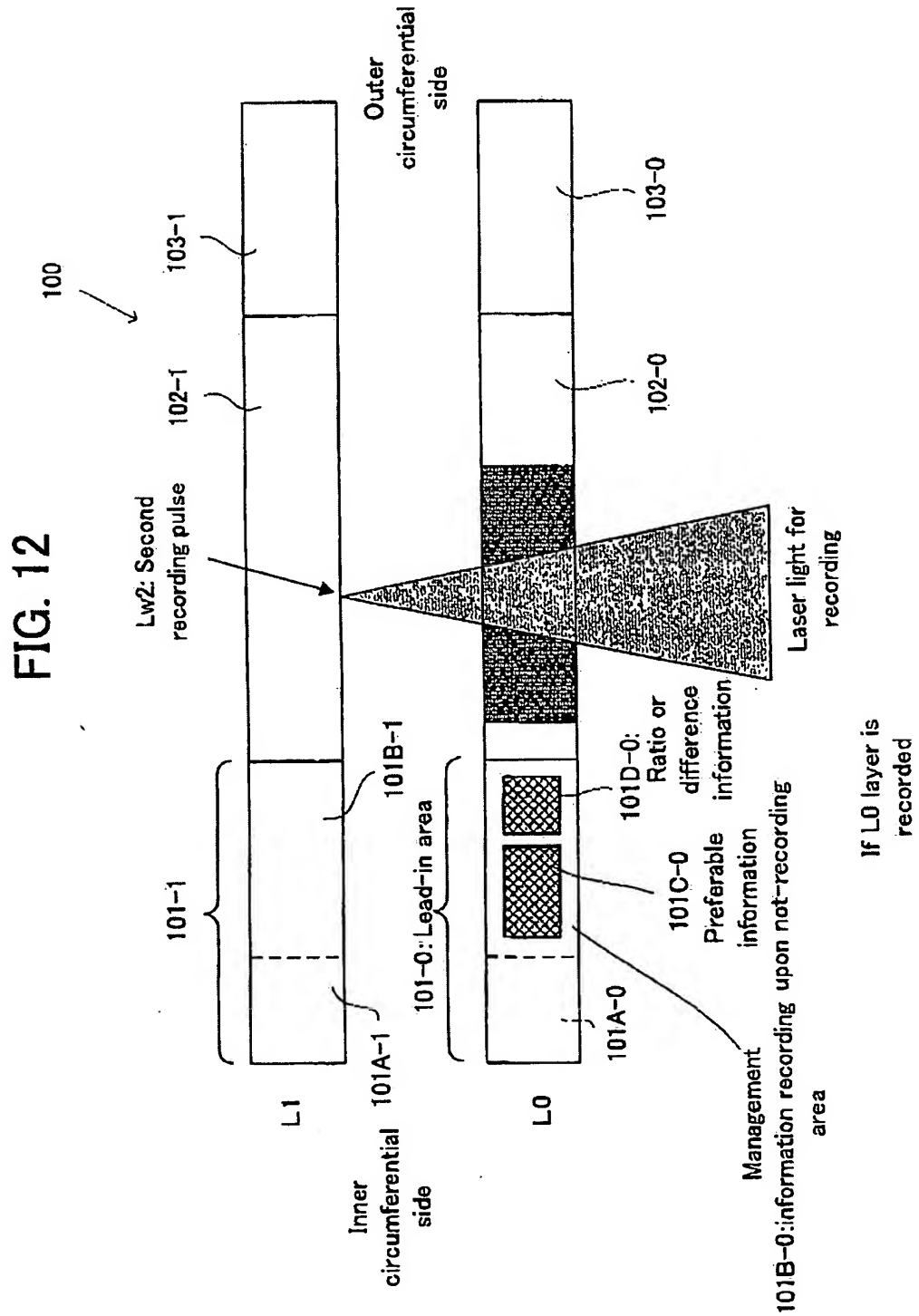
[FIG. 11]

FIG. 11


100
Outer circumferential side
103-1
102-1
Lw1: First recording pulse
101-1
101A-1
101B-1
101-0: Lead-in area
101D-0: Ratio or difference information
101A-0: OPC area
101B-0: Management information recording area
101C-0: Preferable information upon not-recording
L1 layer
L0 layer
Inner circumferential side
If L0 layer is unrecorded
Laser light for recording
102-0: Data zone
103-0: Lead-out area

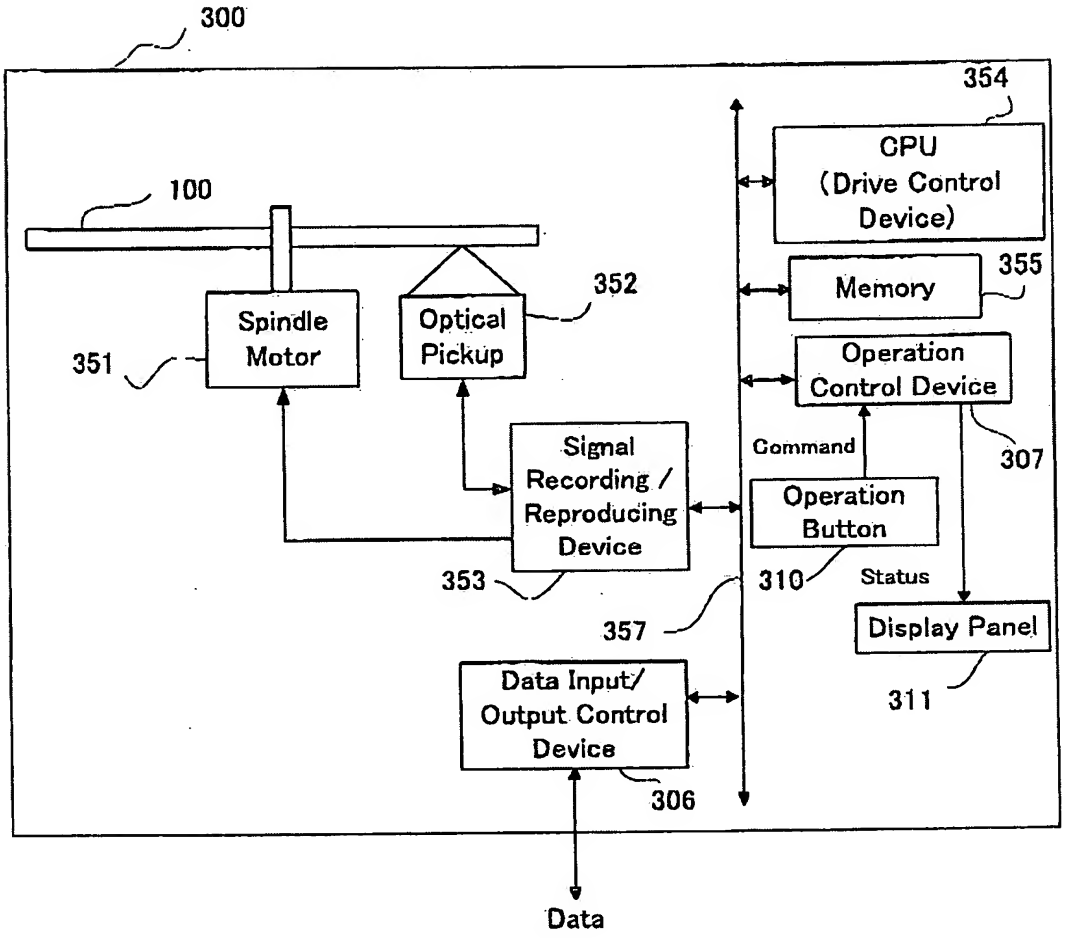
[FIG. 12]

FIG. 12


100
103-1
102-1
101-1
Outer circumferential side
Lw2: Second recording pulse
101B-1
101-0: Lead-in area
101A-1
L1
Inner circumferential side
103-0
102-0
101D-0: Ratio or difference information
101C-0 Preferable information
Laser light for recording
101A-0
L0
Management area
101B-0:information recording upon not-recording
If L0 layer is recorded

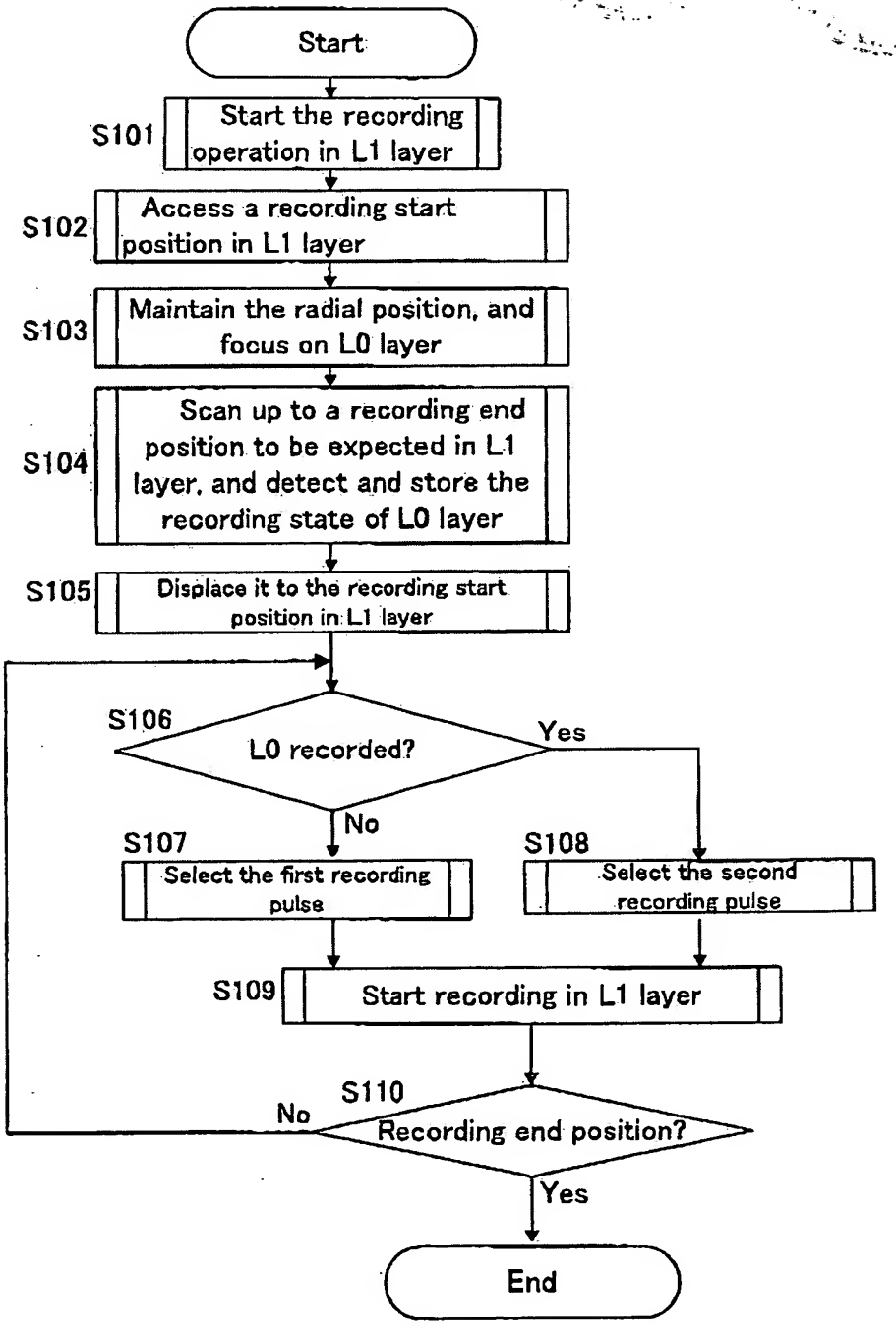
[FIG. 13]

FIG. 13


300
354
CPU
(Drive Control
Device)
100
Memory
355
352
Spindle
Motor
Optical
Pickup
351
Operation
Control Device
Signal
Recording /
Reproducing
Device
Command
307
Operation
Button
353
310
Status
357
Display Panel
311
Data Input/
Output Control
Device
306
Data

[FIG. 14]

FIG. 14


Start
S101
Start the recording operation in L1 layer
S102
Access a recording start position in L1 layer
S103
Maintain the radial position, and focus on L0 layer
S104
Scan up to a recording end position to be expected in L1 layer, and detect and store the recording state of L0 layer
S105
Displace it to the recording start position in L1 layer
S106
L0 recorded?
Yes
No
S107
Select the first recording pulse
S108
Select the second recording pulse
S109
Start recording in L1 layer
S110
No
Recording end position?
Yes
End